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09/886,909	06/21/2001	Michael J. Kocin	20-0087	6653

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EXAMINER

MANOSKEY, JOSEPH D

ART UNIT

PAPER NUMBER

2113

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3

Please find below and/or attached an Office communication concerning this application or proceeding.

A

# Office Action Summary

Application No.

09/886,909

Applicant(s)

KOCIN, MICHAEL J.

Examiner

Joseph Manoskey

Art Unit

2113

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: reference number 29 on page 21, paragraph 70, makes reference to the housing. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities: On page 21, paragraph 70 the reference number "1" is used to refer to both the "LRM module" and a "power conditioner".

Appropriate correction is required.

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. The term "shallow" in claim 9 is a relative term which renders the claim indefinite. The term "shallow" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "depth" has thus been made indefinite by the term "shallow".

7. Claim 9 recites the limitation "said tempest filter" in the first line of the eleventh paragraph of the claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansel et al., U.S. Patent 4,694,194, hereinafter referred to as "Hansel" in view of Gregorich et al., U.S. Patent 5,289,046, hereinafter referred to as "Gregorich" and Breikss, U.S. Patent 4,122,359.

10. Referring to claim 1, Hansel teaches a power supply comprising an input from prime power and an output for supplying power (See Fig. 1). Hansel also discloses the

power module comprising a first branch and a second branch for supplying a voltage (See Fig. 1). Hansel teaches the second branch including a battery and means for supplying a voltage from the battery (See Fig. 1). Hansel discloses a steering circuit that acts as an electronic switch that supply voltage from the first branch or from the second branch when it is not receiving sufficient power (See Fig. 1 and Col. 2, line 68 to Col. 3, line 8). Hansel also teaches a microcomputer, interpreted as a microcontroller, for controlling switching of the steering circuit (See Fig. 1 and 2, and Col. 6, line 1-12). Hansel discloses the first branch supplying power to the microcomputer (See Fig. 1 and 2). Hansel also teaches a charge device coupled to the first branch, Hansel teaches the output filter being a capacitance filter that produces a constant voltage at its output (See Fig. 1, and Col. 2, lines 59-65). Hansel does not teach the power supply's second branch producing a voltage less then the voltage from the first branch and Hansel does not teach the second branch including a battery charger. Breikss teaches a memory protection arrangement that has regulated power supply and a battery that produces a voltage less than that of the power supply (See Figure and Col. 3, lines 15-17). Gregorich discloses a power supply that has a second branch that includes a battery array and a charger for that batter array (See Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the two different voltage levels of Breikss and the battery charger of Gregorich with power supply with battery backup of Hansel. This would have been obvious to one of ordinary skill in the art at the time of the invention because the battery can supply maintenance energy for the memory when the power supply voltage decays below the battery voltage (See

Breikss Col. 1, lines 40-43) and because the battery charger allows the battery to maintain its charge when not in use and prolongs its lifetime.

11. Referring to claim 2, Hansel, Breikss, and Gregorich teach all the limitations (See rejection of claim 1) including adjustable control means for the first and second branch circuits. Hansel teaches a pulse width modulator that is used to adjust the output voltage (See Fig. 1 and 2, and Col. 1, lines 64-67). Hansel also discloses means for monitoring voltage and current of the first and second branches (See Fig. 1 and 2). Hansel also teaches means for adjusting the adjustable means, control circuitry (See Fig. 1 and 2, and Col. 3, lines 17-19).

12. Claim 3-5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hansel in view of Breikss, Gregorich, and Wiegel, U.S. Patent 4,528,459.

13. Referring to claim 3, Hansel teaches a power supply comprising an input from prime power and an output for supplying power (See Fig. 1). Hansel discloses the power supply having an input filter (See Fig. 1). Hansel also discloses the power module comprising a first channel and a second channel for supplying a voltage (See Fig. 1). Hansel teaches the second branch including a battery and means for supplying a voltage from the battery (See Fig. 1). Hansel discloses a steering circuit that acts as an electronic switch that supply voltage from the first branch or from the second branch when it is not receiving sufficient power (See Fig. 1 and Col. 2, line 68 to Col. 3, line 8). Hansel also teaches a microcomputer, interpreted as a microcontroller, for controlling switching of the steering circuit (See Fig. 1 and 2, and Col. 6, line 1-12). Hansel discloses the first branch supplying power to the microcomputer (See Fig. 1 and 2).

Hansel teaches the output filter being a capacitance filter that produces a constant voltage at its output (See Fig. 1, and Col. 2, lines 59-65). Hansel does not teach the power supply's second branch producing a voltage less than the voltage from the first branch, Hansel does not teach the second branch including a battery charger, and Hansel does not teach the power supply being for an avionics system. Breikss teaches a memory protection arrangement that has regulated power supply and a battery that produces a voltage less than that of the power supply (See Figure and Col. 3, lines 15-17). Gregorich discloses a power supply that has a second branch that includes a battery array and a charger for that battery array (See Fig. 1). Wiegel discloses a battery backup power source for avionics equipment (See Col. 1, lines 9-25). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the two different voltage levels of Breikss and the battery charger of Gregorich with power supply with battery backup of Hansel for the use of supplying power to the avionics equipment of Wiegel. This would have been obvious to one of ordinary skill in the art at the time of the invention because the battery can supply maintenance energy for the memory when the power supply voltage decays below the battery voltage (See Breikss Col. 1, lines 40-43) and because the battery charger allows the battery to maintain its charge when not in use and prolongs its lifetime. This would have also been obvious to one of ordinary skill in the art at the time of the invention to use for avionics equipment since they require backup power instantaneously (See Wiegel, Col. 1, lines 9-12).

14. Referring to claims 4 and 5, Hansel, Breikss, Gregorich, and Wiegel, teach all the limitations (See rejection of claim 3). Hansel teaches the use of a transformer, an

output rectifier, which is interpreted as a regulator, and an output filter (See Fig. 1). Hansel also teaches the use of control circuitry for the channels responsive to the microcontroller (See Fig. 1 and 2).

15. Claims 6, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansel, Breikss, Gregorich, and Wiegel, in view of Brown et al., U.S. Patent 5,481,730, hereinafter referred to as "Brown".

16. Referring to claim 6, Hansel, Breikss, Gregorich, and Wiegel teach all the limitations (See rejection of claim 5) except for the invention having eight current and voltage sensors at the inputs and outputs of the channels, however Hansel does disclose using sensors to monitor both the current and voltages of the power supply. Brown teaches of monitoring a power supply that includes monitoring primary and secondary sides of the power supply (See Col. 2, lines 16-19). Brown also teaches monitoring both the current and the voltage at these points (See Col. 2, lines 25-26 and lines 42-44). It would be obvious to one of ordinary skill in the art at the time of the invention to combine the monitoring of both voltage and current on both the primary and secondary side of the power supply of Brown to both the first and second channels of Hansel, Breikss, Gregorich, and Wiegel. This would have been obvious to one of ordinary skill in the art at the time of the invention to do because it desirable to monitor important parameters from the primary and secondary sides of a power supply (See Col. 2, lines 16-19).

17. Referring to claim 7, Hansel, Breikss, Gregorich, Wiegel, and Brown teach all the limitations (see rejection of claim 6) including the invention comprising of analog to



digital converter to convert the data from the sensors to digital data (See Fig. 1 and 2 of Hansel).

18. Referring to claim 8, Hansel, Breikss, Gregorich, Wiegel, and Brown teach all the limitations (see rejection of claim 7) including the microcontroller includes memory and program means (See Hansel, Fig. 2 and Col. 5, lines 29-32). The microprocessor monitors the information provided by the sensors (See Hansel, Col. 5, lines 49-52). The microcontroller also compares values and adjusts the pulse width modulator, interpreted as the adjustable means (See Hansel, Col. 5, lines 52-60).

19. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansel in view of Gregorich, Wiegel, and Goossen et al., U.S. Patent Application Publication 2003/0028687, hereinafter referred to as "Goossen".

20. Referring to claim 10, Hansel teaches a power supply comprising an input from prime power and an output for supplying power (See Fig. 1). Hansel discloses the power supply having an input filter (See Fig. 1). Hansel also discloses the power supply having a power conversion circuit, the power converter, transformer, rectifier and filter are interpreted as the power conversion circuit (See Fig. 1). Hansel teaches the power supply including a battery and means for supplying a voltage from the battery (See Fig. 1). Hansel discloses a steering circuit that acts as an electronic switch that supply voltage from the first branch or from the second branch when it is not receiving sufficient power (See Fig. 1 and Col. 2, line 68 to Col. 3, line 8). Hansel teaches the output filter being a capacitance filter that produces a constant voltage at its output (See Fig. 1, and Col. 2, lines 59-65). Hansel teaches the use of an output rectifier, which is interpreted

as a regulator, and an output filter (See Fig. 1). Hansel also teaches a microcomputer, interpreted as a microcontroller, for controlling switching of the steering circuit (See Fig. 1 and 2, and Col. 6, line 1-12). Hansel also teaches the use of control circuitry for the channels responsive to the microcontroller (See Fig. 1 and 2). Hansel does not teach the power supply including a battery charger, Hansel does not teach the power supply being for an avionics system, and Hansel does not teach the power supply having a housing of rectangular shape and a printed circuit board. Gregorich discloses a power supply that includes a battery array and a charger for that batter array (See Fig. 1). Wiegel discloses a battery backup power source for avionics equipment (See Col. 1, lines 9-25). Goossen teaches a power module that has a housing that is rectangular in shape and includes a printed circuit board (See Fig. 1, 2, and 5). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the battery charger of Gregorich and housing and PCB of Goossen with power supply with battery backup of Hansel for the use of supplying power to the avionics equipment of Wiegel. This would have been obvious to one of ordinary skill in the art at the time of the invention because the battery charger allows the battery to maintain its charge when not in use and prolongs its lifetime and because the housing and PCB allows for a modular design (See Col. 1, paragraph 5). This would have also been obvious to one of ordinary skill in the art at the time of the invention to use for avionics equipment since they require backup power instantaneously (See Wiegel, Col. 1, lines 9-12).

21. Referring to claim 10, Hansel, Gregorich, Wiegel, and Goossen teach all the limitations (See rejection of claim 9) including Hansel teaching the power supply having

a power conversion circuit, the power converter, transformer, rectifier and filter are interpreted as the power conversion circuit (See Fig. 1). The rectifier is interpreted as a regulator. Hansel also teaches the output filter being a capacitance filter that produces a constant voltage at its output (See Fig. 1, and Col. 2, lines 59-65).

### ***Conclusion***

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art are examples of power supplies with battery backups:

U.S. Patent 6,445,088 to Spitaels et al.

U.S. Patent 6,597,074 to Tsujikado et al.


U.S. Patent 6,275,946 to Meir

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Manoskey whose telephone number is (703) 308-5466. The examiner can normally be reached on Mon.-Fri. (8am to 4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (703) 305-9713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JDM  
February 20, 2004

  
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